

Serial No.: 10/812,467
Office Action Date: 27 July 2006

Filed: 03/30/2004
Amendment Date: 10/26/2006

Amendments to Specification

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Please amend Para. 0008 of the specification as follows:

[0008] Commonly assigned co-pending U.S. Patent Application Serial Number 10/812,466 (Attorney Docket Number GP-303149), the disclosure of which is hereby incorporated by reference herein in its entirety, describes a method to control a direct-injection gasoline engine during LNT regeneration events thereby improving driveability by adapting fueling to account for pumping losses resulting from higher throttling at homogeneous operation. Further, commonly assigned co-pending U.S. Patent Application Serial Number 10/812,584 (Attorney Docket Number GP-303148), the disclosure of which is hereby incorporated by reference herein in its entirety, describes a method to control a direct-injection gasoline engine during LNT regeneration events thereby improving driveability by timing transitions to homogeneous operation in accordance with fuel/air equivalence ratio considerations.

Please amend Para. 0018 of the specification as follows:

[0018] FIGS. 4-7 show illustrative vehicle test data that includes a single regeneration event hastened in accordance with the present invention due to the accumulated NOx exceeding a first threshold, wherein;

FIG. 4 is a graph illustrating vehicle speed in accordance with the flow of operations of FIG. 2,

FIG. 5 is a graph illustrating accumulated lean NOx trap loading and regeneration in accordance with the flow of operations of FIG. 2,

FIG. 6 is a graph illustrating desired air-fuel fuel/air equivalence ratio for initiating a regeneration event in accordance with the flow of operations of FIG. 2, and

FIG. 7 is a graph illustrating brake effective mean pressure in accordance with the flow of operations of FIG. 2.

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Please amend Para. 0036 of the specification as follows:

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[0036] FIGS. 6 and 7 show a single regeneration event hastened in accordance with the invention due to the accumulated NOx exceeding K1. In FIG. 6, the desired air-fuel fuel/air equivalence ratio (Des EQ ratio) for initiating a regeneration event is set in accordance with step 216 of FIG. 2. FIG. 7 illustrates transition to homogenous operation and return to stratified charge operation. FIGS. 6 and 7 illustrate that at an x axis value (time) of about 450, the BMEP approaches 5 bar. As the accumulated NOx as per FIG. 5 is still below the first threshold, the engine operates in stratified mode as shown in FIG. 6. However, as time progresses, the LNT fills up. Just after time 700, the accumulated NOx exceeds the first threshold as seen in FIG. 5. The active shrinkage of the stratified region then causes the engine to be forced to homogeneous operation the next time the BMEP approaches 5 bar, around time 720. This leads to an LNT regeneration event, as seen in FIG. 6 with the fuel-air equivalence ratio exceeding 1.